

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph in section "Cross Reference to Related Applications" with the following paragraph:

This application is a continuation-in-part of copending U.S. utility application entitled, "Discrete Multitone Interleaver," having ser. no. 09/736,353, filed December 14, 2000 (Attorney Docket No. 61607-1360, Paradyne Docket No. 1999-25). U.S. utility application no. 09/736,353 claims priority to U.S. provisional application entitled, "Discrete Multi-Tone Trellis Interleaver," having ser. no. 60/170,891, filed December 15, 1999 (Attorney Docket No. 61606-8320, Paradyne Docket No. 1999-25). U.S. utility application no. 09/736,353 and U.S. provisional application no. 60/170,891 are entirely incorporated herein by reference.

Please replace the last paragraph on p. 3 with the following paragraph

The DMT 16-state trellis code constraint length is approximately four 4-dimensional symbols. 4-dimensional symbols are encoded as two 2-dimensional constellations on two tones. Four 4-dimensional symbols are encoded over eight tones. DFT DMT suffers from performance limitations including $\sin x/x$ coupling of energy between adjacent tones. DMT convolutional encoders operate "serially" on mapped constellations such that consecutively generated constellations are mapped to adjacent tones. $(\sin x)/x$ coupling allows noise on one tone to effect adjacent tones. Correlated noise on adjacent tones, particularly that within the DMT code constraint length, contributes to multiple metric calculations in the trellis decoder. Correlated noise in consecutive metric calculations causes negative gain and can result in performance worse than if no coding was employed.
